Applicant : Porter, et al.    Attorney's Docket No.:12519-010US1
Serial No.: Not yet assigned
Filed  : June 13, 2005
Page 2 of 14

Amendment to the Claims:

Please add the following new paragraph before the paragraph beginning at page 1, line 2:

## CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a 371 application of and claims priority to International Patent Application Serial No. PCT/GB2003/005039, filed November 19, 2003, which claims priority to United Kingdom Patent Application Serial No. 0229065.8, filed December 12, 2002.  The disclosures of the prior applications are considered part of and are incorporated by reference in the disclosure of this application.

Applicant : Porter, et al.　　　　　　　Attorney's Docket No.:12519-010US1
Serial No.: Not yet assigned
Filed　　　: June 13, 2005
Page 3 of 14

Amendment to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

1-27.　　　(Canceled)

28.　　(New) A fixed wireless access (FWA) communications system comprising an access point and a plurality of subscriber units each transmitting a predetermined data sequence: comprising means for determining the impulse response of the upstream channel between each subscriber unit and the access point; means for generating a data sequence for transmission from a subscriber unit to the access point, the data comprising the predetermined data sequence pre-distorted to compensate for the channel impulse response of the upstream channel between the subscriber unit and the access point, means for storing the pre-distorted predetermined data sequence within the subscriber unit, and means for transmitting the stored sequence from the subscriber unit to the access point when it is desired to transmit the predetermined sequence to the access point; wherein the means for generating the data sequence for transmission from the subscriber unit to the access point comprises a processor

Applicant : Porter, et al.                    Attorney's Docket No.:12519-010US1
Serial No.: Not yet assigned
Filed      : June 13, 2005
Page 4 of 14

for calculating the pre-distorted predetermined data sequence

from the upstream channel response and the predetermined data

sequence using the Moore-Penrose Pseudo-Inverse Algorithm.


29.   (New) A system as claimed in Claim 28 in which the

means for determining the impulse response of the upstream

channel comprises means for transmitting a training data

sequence having good auto correlation properties from the

subscriber unit to the access point, the training data sequence

being known to the access point, and means for deriving the

channel impulse response from the received data sequence.


30.   (New) A system as claimed in Claim 29 in which all

subscriber units transmit the same training data sequence to

enable their respective upstream channel impulse responses to be

determined.


31.   (New) A system as claimed in Claim 28 in which the

access point is arranged to transmit the respective upstream

channel impulse response and a unique contention word to each

subscriber unit, the contention word being the predetermined

data sequence, the means for generating the pre-distorted

contention word being located within the subscriber unit.

Applicant : Porter, et al.                    Attorney's Docket No.:12519-010US1
Serial No.: Not yet assigned
Filed     : June 13, 2005
Page 5 of 14

32.   (New) A system as claimed in Claim 29 in which the access point is arranged to transmit the respective upstream channel impulse response and a unique contention word to each subscriber unit, the contention word being the predetermined data sequence, the means for generating the pre-distorted contention word being located within the subscriber unit.

33.   (New) A system as claimed in Claim 30 in which the access point is arranged to transmit the respective upstream channel impulse response and a unique contention word to each subscriber unit, the contention word being the predetermined data sequence, the means for generating the pre-distorted contention word being located within the subscriber unit.

34.   (New) A system as claimed in Claim 28 in which the access point is arranged to allocate a unique contention word to the subscriber unit, to calculate a pre-distorted contention word from the upstream channel impulse response, the pre-distorted contention word being such that when it is transmitted from the subscriber unit the access point is capable of decoding it without using equalisation, and to transmit to the subscriber unit the pre-distorted unique contention word.

Applicant : Porter, et al.          Attorney's Docket No.:12519-010US1
Serial No.: Not yet assigned
Filed      : June 13, 2005
Page 6 of 14

35.    (New) A system as claimed in Claim 29 in which the

access point is arranged to allocate a unique contention word to

the subscriber unit, to calculate a pre-distorted contention

word from the upstream channel impulse response, the pre-

distorted contention word being such that when it is transmitted

from the subscriber unit the access point is capable of decoding

it without using equalisation, and to transmit to the subscriber

unit the pre-distorted unique contention word.


36.    (New) A system as claimed in Claim 30 in which the

access point is arranged to allocate a unique contention word to

the subscriber unit, to calculate a pre-distorted contention

word from the upstream channel impulse response, the pre-

distorted contention word being such that when it is transmitted

from the subscriber unit the access point is capable of decoding

it without using equalisation, and to transmit to the subscriber

unit the pre-distorted unique contention word.


37.    (New) A system as claimed in Claim 28 in which the

subscriber unit comprises an equaliser for equalising the

downstream channel between the access point and the subscriber

unit, and the determining means comprises means for transmitting

Applicant : Porter, et al.                    Attorney's Docket No.:12519-010US1
Serial No.: Not yet assigned
Filed     : June 13, 2005
Page 7 of 14

a training data sequence having good auto correlation properties

from the subscriber unit to the access point, means for re-

transmitting the received training data sequence from the access

point to the subscriber unit, and means within the subscriber

unit for deriving the upstream channel impulse response from the

received re-transmitted training data sequence.

38.   (New) A system as claimed in Claim 37 in which the

predetermined data sequence is a contention word which is unique

to each subscriber unit in the system.

39.   (New) A subscriber unit for use in a fixed wireless

access system as claimed in Claim 28: the subscriber unit

comprising means for transmitting a training sequence having

good auto correlation properties over an upstream channel to the

access point; means for storing, in pre-distorted form, a unique

contention word received from the access point, the pre-

distorted form being such as to compensate for the impulse

response of the upstream channel; and means for transmitting the

pre-distorted contention word to the access point in order to

request access to a transmission channel.

Applicant : Porter, et al.          Attorney's Docket No.:12519-010US1
Serial No.: Not yet assigned
Filed    : June 13, 2005
Page 8 of 14

40.   (New) A subscriber unit as claimed in Claim 29 arranged to receive the pre-distorted contention word from the access point over the downstream channel.

41.   (New) A subscriber unit as claimed in Claim 39 arranged to receive the contention word from the access point over the downstream channel together with the upstream channel impulse response calculated at the access point from the training sequence transmitted by the subscriber unit, wherein the subscriber unit comprises means for calculating a pre-distorted contention word from the received contention word and channel impulse response , the pre-distorted contention word being such as to compensate for the impulse response of the upstream channel so that the access point receives the contention word in a form which it can decode without using equalisation, and means for storing the calculated pre-distorted contention word in memory.

42.   (New) A subscriber unit as claimed in Claim 41 in which the calculating means comprises a processor for calculating the upstream channel response from the received re-transmitted training data sequence.

Applicant : Porter, et al.                    Attorney's Docket No.:12519-010US1
Serial No.: Not yet assigned
Filed     : June 13, 2005
Page 9 of 14

43.    (New) A subscriber unit as claimed in Claim 39 arranged to receive a unique contention word and the training sequence re-transmitted by the access point in the form received by the access point: the subscriber unit comprising means for determining the upstream channel impulse response from the received re-transmitted training sequence; means for calculating a pre-distorted contention word using the unique contention word and the determined upstream channel impulse response such that on transmission of the pre-distorted contention word over the upstream channel the access point is able to decode the contention word without the use of equalisation; and means for storing the calculated pre-distorted contention word in memory.

44.    (New) A subscriber unit as claimed in Claim 41 in which the means for calculating the pre-distorted contention word comprises a processor using the Moore-Penrose Pseudo-Inverse Algorithm to calculate the pre-distorted contention word from the upstream channel impulse response and the received contention word.

45.    (New) A subscriber unit as claimed in Claim 42 in which the means for calculating the pre-distorted contention word comprises a processor using the Moore-Penrose Pseudo-

Applicant : Porter, et al.                    Attorney's Docket No.:12519-010US1
Serial No.: Not yet assigned
Filed      : June 13, 2005
Page 10 of 14

Inverse Algorithm to calculate the pre-distorted contention word

from the upstream channel impulse response and the received

contention word.


46.   (New) A subscriber unit as claimed in Claim 43 in

which the means for calculating the pre-distorted contention

word comprises a processor using the Moore-Penrose Pseudo-

Inverse Algorithm to calculate the pre-distorted contention word

from the upstream channel impulse response and the received

contention word.


47.   (New) A subscriber unit as claimed in Claim 44 in

which the means for calculating the pre-distorted contention

word comprises a processor using the Moore-Penrose Pseudo-

Inverse Algorithm to calculate the pre-distorted contention word

from the upstream channel impulse response and the received

contention word.


48.   (New) An access point for use in a fixed wireless

access system as claimed in Claim 28: the access point

comprising means for receiving a training data sequence having

good auto correlation properties from a subscriber unit; means

for allocating the subscriber unit a unique contention word;

Applicant : Porter, et al.                    Attorney's Docket No.:12519-010US1
Serial No.: Not yet assigned
Filed     : June 13, 2005
Page 11 of 14

means for calculating the upstream channel impulse response between the subscriber unit and the access point from the received training data sequence; means for generating a pre-distorted contention word from the calculated upstream channel impulse response and the allocated contention word; and means for transmitting the pre-distorted contention word to the subscriber unit.

49.    (New) An access point as claimed in Claim 48 in which the generating means comprises a processor for generating the pre-distorted contention word from the upstream channel impulse response and the contention word using the Moore-Penrose Pseudo-Inverse Algorithm.

50.    (New) An access point for use in a fixed wireless access system as claimed in Claim 28 comprising means for receiving a training data sequence having good auto correlation properties from a subscriber unit; means for allocating the subscriber unit a unique contention word; and means for transmitting the received training data sequence together with the unique contention word.

Applicant : Porter, et al.                    Attorney's Docket No.:12519-010US1
Serial No.: Not yet assigned
Filed    : June 13, 2005
Page 12 of 14

51.   (New) A method of transmitting a predetermined data sequence from a transmitter in a subscriber unit to a receiver in an access point in a fixed wireless access system over a transmission channel having a channel impulse response comprising the steps of;

a)    determining the channel impulse response,

b)    pre-distorting the predetermined data sequence using the determined channel impulse response so that when transmitted over the channel and received at the receiver it can be decoded without the use of equalisation, by generating the pre-distorted predetermined data sequence from the predetermined data sequence and the channel impulse response using the Moore-Penrose Pseudo-Inverse Algorithm, and

c)    storing the pre-distorted data sequence in memory in the subscriber unit.


52.   (New) A method as claimed in Claim 51 in which step a) comprises the steps of;

d)    transmitting a training data sequence from the subscriber unit to the access point and,

e)    calculating the channel impulse response from the received training data sequence.

Applicant : Porter, et al.                  Attorney's Docket No.:12519-010US1
Serial No.: Not yet assigned
Filed     : June 13, 2005
Page 13 of 14

53.   (New) A method as claimed in Claim 52 in which step e) is carried out at the access point and comprising the further steps of;

f)   transmitting the calculated channel impulse response from the access point to the subscriber unit, and

g)   transmitting the predetermined data sequence from the access point to the subscriber unit.

54.   (New) A method as claimed in Claim 52 in which steps b) and e) are carried out in the access point and comprising the further step of transmitting the pre-distorted predetermined data sequence from the access point to the subscriber unit.

55.   (New) A method as claimed in Claim 52 comprising the step of re-transmitting the training data sequence from the access point to the subscriber unit wherein step e) is carried out at the subscriber unit.